WELCOME

U.S. DEPARTMENT OF ENERGY | Energy Efficiency & Renewable Energy

DOE Solid-State Lighting Manufacturing R&D Workshop

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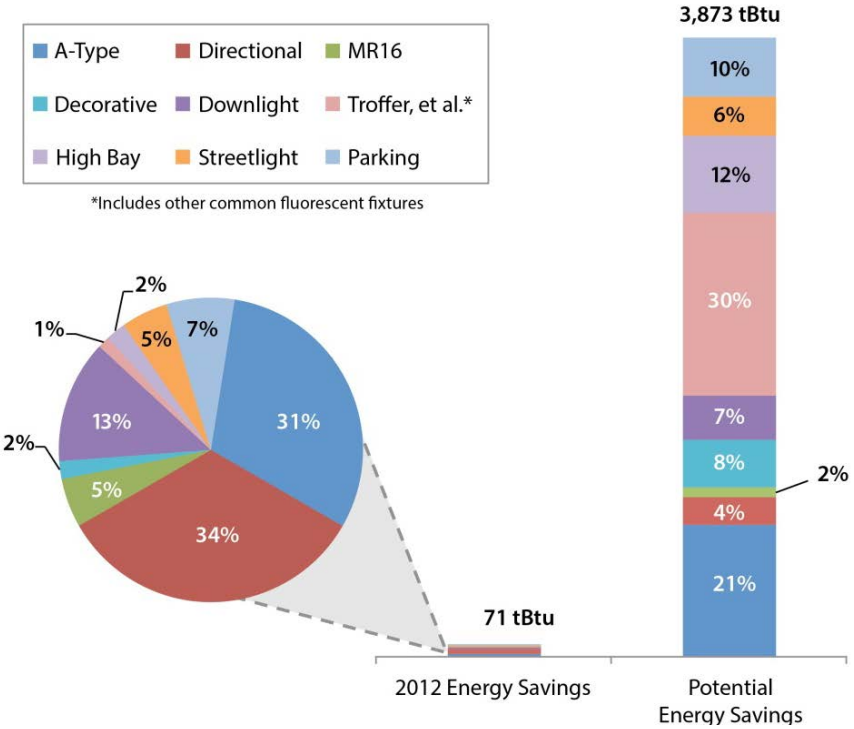
U.S. Department of Energy

Why Are We Here?

- ☑ Catch a Red Sox game
- ☑ Sample local brew
- ☑ Walk the Freedom Trail
- ☑ Learn, share, participate

SSL Saving Energy Now

- In 2012 LED lighting saved 71 tBtu across 9 applications analyzed—indoor and outdoor
  - Equivalent to annual energy cost savings of about $675M
  - Far exceeds total DOE program investment of $270M
- Switching entirely to LEDs could save $37B in annual energy costs



www.ssl.energy.gov/publications/pdfs/ssl/led-adoption-report_2013.pdf

"It's not complicated—more is better"

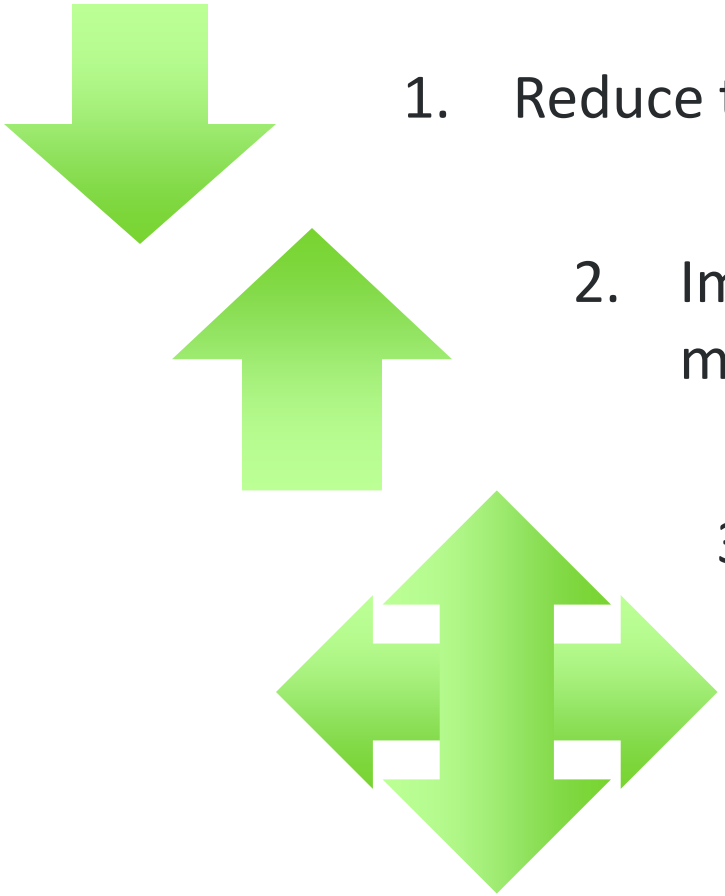
What Is Needed?

- Cost reductions are key, but they don't just "happen"
- Need to rethink the way things are done, how products are designed
- New manufacturing methods and materials
- Rapid prototyping, design for manufacture
- More on this in today's talks, tonight's reception, and tomorrow's discussions

It's not your grandfather's light bulb, so how can it be manufactured the same way?

DOE SSL Manufacturing R&D Initiative

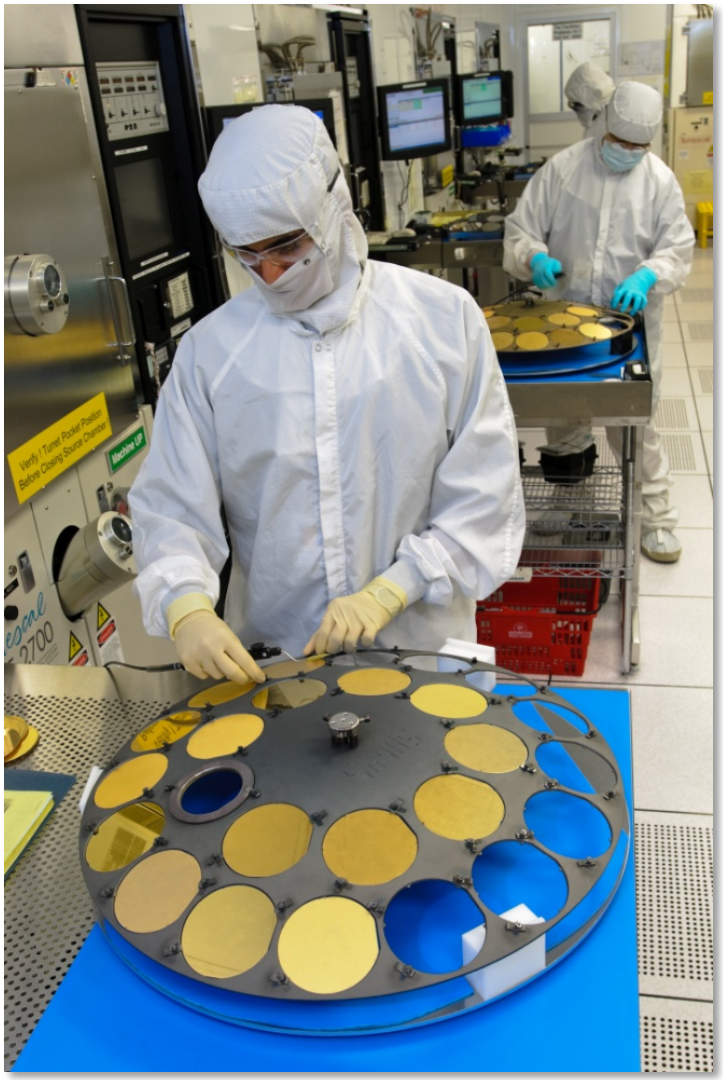
- Launched in 2009 with funding from ARRA
- Three primary goals:



1. Reduce the cost of SSL products
2. Improve product consistency while maintaining high-quality products
3. Encourage growth, leadership, and sustainability of domestic U.S. manufacturing within the SSL industry

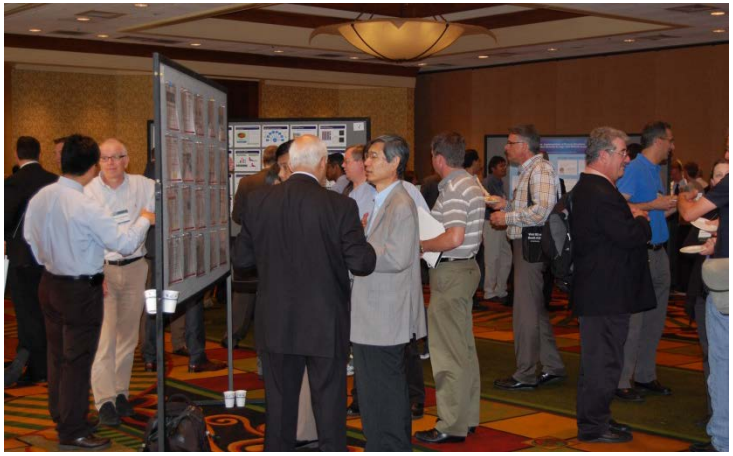
What's at Stake?

- Opportunity to keep and grow current U.S. SSL manufacturing base
- Retain and create U.S. jobs
- Increase sales of value-added exports
- Maintain U.S. technology leadership in product advances, future development



The Role of DOE

- Workshops and roundtables provide forum for discussion and building partnerships
- Updates for DOE SSL Manufacturing R&D Roadmap



Your Role

- **Learn, share, participate in discussions…**
- Where is the market headed?
- How will LED chip and package manufacturing evolve in the next five years?
- How will luminaire manufacturing change?
- What can we learn from other industries?
- What is the cost impact of testing and modeling?
- How will new materials and methods enable a ramp-up in production?
- R&D presentations: Updates on DOE-funded projects
- Reception: R&D project posters and hands-on exhibits
- LED/OLED track sessions: Refine roadmap tasks and priorities


Growth is never by mere chance;
it is the result of forces working together.
—James Cash Penney